

**WHAT IS CLAIMED IS:**

1. A single ended SAR converter front end with common mode driver noise cancellation, comprising:

a differential amplifier having positive and negative inputs and an output;

a switched capacitor array operable in a SAR data conversion operation to vary the voltage on one of said positive or negative inputs of said differential amplifier;

a common mode driver for delivering a low impedance common mode voltage signal to a common mode node;

switching circuitry for switching the common mode voltage signal on said common mode node to said positive and negative inputs of said differential amplifier during a portion of a SAR data conversion cycle; and

a capacitor reference circuit attached to the other of said positive or negative inputs of said differential amplifier during at least said portion of the SAR data conversion cycle, said capacitor reference circuit and said capacitor array during at least said portion of the SAR data conversion cycle having relative capacitance values that increase the common mode rejection of any noise introduced to said common mode node at the input of said differential amplifier.

2. The SAR converter front end of Claim 1, wherein the relative capacitance values are substantially equal capacitance values.

3. The SAR converter front end of Claim 1, wherein said common mode rejection is maximized by said capacitor reference circuit.

4. The SAR converter front end of Claim 1, wherein said capacitor reference circuit has associated therewith reference voltage with switching circuitry for switching a reference voltage to said positive input of said differential amplifier when not operating in said portion of the SAR data conversion cycle.

5. The SAR converter front end of Claim 4, wherein said reference voltage comprises ground.

6. The SAR converter front end of Claim 5, wherein the SAR converter front end is fabricated on an integrated circuit and said ground reference voltage is external to said integrated circuit.

7. The SAR converter front end of Claim 4, wherein said capacitor reference circuit comprises:

a first capacitor connected between said positive input of said differential amplifier and said reference and internal reference voltage; and

5 a switched capacitor connected between said positive input of said differential amplifier and a switched node; and

a switch for selectively switching the other end of said switch between said reference and an external and offset reference voltage wherein said switch is operable to connect said switch to said external ground reference during said portion of the SAR data conversion cycle  
10 and, otherwise to said internal ground.

8. The SAR converter front end of Claim 1, wherein said capacitor reference circuitry comprises a fixed capacitor.